**Homework 55H** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Special Right Triangles: 30 – 60 - 90** Period:\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Failure to show all work and write in complete sentences will result in LaSalle!**

**For problems 1 – 6, find the value of each variable. Write your answers in simplest radical form.**

|  |  |
| --- | --- |
| 1) | 2) |
| 3) | 4) |
| 5)    *C* | 6) |
| 7) Use the figure to the right to complete the table below. |  |
| 8) The side lengths of a triangle are given. Determine whether it is a *45°-45°-90° triangle,* a *30°-60°-90° triangle,* or *neither.*  a. 5, 10,  b. 6, 6, | |

|  |  |  |  |
| --- | --- | --- | --- |
| 9) You are using wood to build a pyramid-shaped skateboard ramp. You want each ramp surface to incline at an angle of 30° and the maximum height to be 56 centimeters as shown. | Use the relationships shown in the diagram to determine the approximate lengths of  *a:*  *b:*  *c:*  *d:* | | |
| 10) Find the value of c and d in the figure below. | | 11) You are painting barn doors. You know that the perimeter of the doors is 64 feet and that the ratio of the length to the height is 3:5. Find the area of the doors. | |
| 12) **EXTRA CREDIT** **Challenge Problem**: Find x. Then find the hypotenuse. Be sure to **state** the key step that helped you solve this problem. (**HINT**: Use what you know about the ratios!)  30⁰  60⁰  **Leave your answers in simplified radical form and check your side lengths using the Pythagorean theorem.** | | |  |